

Vandenberg Space Force Base space launch customers along with current and future enterprise applications now have easy access to weather data via new cloud based solution

Lompoc, CA – August 1, 2022 SPACE NEWS - The United States Space Force at Vandenberg Space Force Base (VSFB) has launched [RWaaS] (Range Weather as a Service), a new self-serve weather data stream for commercial space launch customers that can be directly consumed in bulk and in near real time via an API (application programming interface). This saves the commercial launch customer the time and frustration of manually retrieving this data via web scraping an archaic and difficult to scrape website or requesting files from base personnel. The data is also accessible through a public facing web interface that is easy to sort, visualize and download meeting other key range stakeholders where they are.

Launching space vehicles requires intensive pre-launch analysis of weather conditions so range safety operators and commercial space launchers can make confident go-no go launch decisions. Launch customers also use this data on the fly for adjustments to optimize launch performance as well as historical weather data for analytics and modeling. This data is generated by hundreds of range instruments including wind anemometers, mini-SODARs (sonic/radar feeds), Doppler Radar Wind Profilers (DRWPs), upper air balloon weather data, and more.

Over the past ten plus years, commercial space launch customers have been required to use the XUI (external user interface) web application to view, crawl and scrape the data feeds from this weather instrumentation. On top of this the primary XUI server was routinely subject to failure requiring a backup server that was also subject to the same failure issues, making data provision potentially unreliable during launch windows. If launch customers wanted access to the weather data archive they would be required to submit a request and would receive hundreds to thousands of individual excel files, each representing one minute of historic weather data. In the past, this required hours of manual data management and administrative labor from the VSFB weather office per request and similar data management requirements for the launch customer once the files were received.

As of today, the VSFB Weather Office is pleased to announce the new [RWaaS] (Range Weather as a Service), a modernized, cloud based weather data product that is easy to access by commercial launch customers via a well-documented API (application programming interface). An API is a software capability that allows one machine or application to talk to another machine or application, making it easy to automate data transfer from one point to another. This enables commercial launch customers the ability to tap directly into the weather data feed to use however they see fit while also allowing for a website to do the same in order to make the weather data easy to explore for base personnel and the public.

“In the past I had to rely on our HTML scrapping algorithm to look for updates and crawl the 20 year old XUI website that presented weather data in static, tabular, HTML format. Whenever we asked for the historic data archive, the request usually took several days if not weeks and we were given cd-roms with thousands of excel files representing 1 minute intervals.” Said Bruce Banner, Director of Weather for Space Launch Company XYZ. *“Now we just issue a ‘get’ request to the new API and download the data on a daily basis. It keeps the archival data set in our own environment up to date so we can continue to run analytics and monte carlo simulations using the latest and greatest data set. During launch windows we always had to worry that the primary XUI site would go down and that we would have to manually switch to scraping the backup server. Now, we have the confidence that the redundancy is built in, the data is validated and doesn’t corrupt and the data we have is as near real time as we can possibly get it.*

“Treating our weather data as a product that can be easily consumed by our launch customers or served into a user facing application gets us closer to becoming the Range of the Future. We are customer focused and we want our data and IT capabilities to be the same.....On top of that, this is going to save our Weather Office significant time per year on data requests and that translates to real efficiencies and dollars saved.” Said Captain Steve Rogers U.S. Space Force.